

CLAIMS

I/We claim:

1. A method for configuring data communication paths between a central controller and a plurality of devices, the method comprising:
 - ensuring a first appliance is active;
 - for each of the devices, determining a first communication
 - 5 capability between the first appliance and the device;
 - transmitting signals indicative of the first communication capabilities to the central controller; and
 - mapping respective communication paths between the central controller and the devices via the first appliance as a function of the first
 - 10 communication capabilities to obtain an automatic appliance failover.
2. The method for configuring data communication paths as set forth in claim 1, further including:
 - for each of the devices, identifying an optimal path between the appliance and the device; and
 - 5 wherein the mapping includes:
 - mapping the respective communication paths between the central controller and the devices as a function of the optimal paths.
3. The method for configuring data communication paths as set forth in claim 2, wherein the identifying includes at least one of:
 - determining one of a plurality of paths between the appliance and the device having a least number of hops; and
 - 5 determining one of a plurality of paths between the appliance and the device achieving a shortest communication time.
4. The method for configuring data communication paths as set forth in claim 1, further including:

for each of the devices, determining a second communication capability between a second appliance and the device;

5 transmitting signals indicative of the second communication capabilities to the central controller; and

wherein the mapping includes:

mapping the respective communication paths between the central controller and the devices via the first and second appliances as a
10 function of the first and second communication capabilities.

5. The method for configuring data communication paths as set forth in claim 4, wherein the mapping includes:

substantially balancing respective device loads across the appliances.

6. A method for gathering diagnostic data, which are associated with a plurality of devices, within a central processing unit, the method comprising:

determining which of a plurality of intermediate collectors are
5 capable of communicating with the respective devices to obtain an automatic intermediate collector failover;

receiving a notification signal within the central processing unit that one of the intermediate collectors is available;

identifying one of the devices for which the diagnostic data is
10 desired;

determining whether the identified device is capable of communicating with the available intermediate collector;

if the identified device is capable of communicating with the available intermediate collector:

15 transmitting a request signal from the central processing unit to the available intermediate collector requesting the diagnostic data for the identified device; and

transmitting signals indicative of the diagnostic data from
the identified device to the central processing unit via the available
intermediate collector.

7. The method for gathering diagnostic data as set forth in
claim 6, further including:

determining optimal paths from each of the devices to the central
processing unit via respective ones of the intermediate collectors; and

wherein the determining whether the identified device is capable of
communicating with the available intermediate collector includes:

determining whether the identified device has an optimal
path including the available intermediate collector.

8. The method for gathering diagnostic data as set forth in
claim 7, further including:

if the central processing unit has not received the notification signal
for a predetermined time that one of the intermediate collectors is available,
retrieving the signals indicative of the diagnostic data for the devices having the
respective optimal paths including the intermediate collector via another one of the
intermediate collectors.

9. The method for gathering diagnostic data as set forth in
claim 6, further including:

identifying an additional device for which the diagnostic data is
desired;

determining whether the additional identified device is capable of
communicating with the available intermediate collector;

if the identified device and the additional identified device are
capable of communicating with the available intermediate collector:

determining a balanced load for the available intermediate
collector to include at least one of the identified devices;

transmitting a request signal from the central processing unit to the available intermediate collector requesting the diagnostic data for the balanced load; and

15 transmitting signals indicative of the diagnostic data from the balanced load to the central processing unit via the available intermediate collector.

10. The method for gathering diagnostic data as set forth in claim 9, wherein the determining the balanced load includes:

determining whether at least one of the identified devices is capable of communicating with another one of the intermediate collectors.

11. The method for gathering diagnostic data as set forth in claim 6, further including:

5 transmitting signals indicative of identifiers of the intermediate collectors and the respective devices with which the intermediate identifiers are capable of communicating to the central processing unit; and

wherein the determining whether the identified device is capable of communicating with the available intermediate collector includes:

10 comparing the identifier of the identified device with the identifiers of the devices capable of communicating with the available intermediate collector.

12. A plurality of signals executable on a computing device including a plurality of devices, a plurality of appliances, each of the devices communicating with at least one of the appliances, means for ensuring each of the appliances is active, means for determining which of the appliances communicate
5 with the respective devices, and a central controller, which communicates with each of the appliances, the signals comprising:

a notification signal transmitted to the central controller indicating that one of the appliances is available; and

an identification signal identifying at least one of the devices
10 capable of communicating with the available appliance for which the diagnostic
data is desired to achieve an automatic appliance failover.

13. The signals executable on a computing device as set forth in
claim 12, wherein:

a request signal is transmitted from the central controller to the
available appliance requesting the diagnostic data for the at least one identified
5 device; and

a signal indicative of the diagnostic data is transmitted from the at
least one identified device to the central controller via the available appliance.

14. The signals executable on a computing device as set forth in
claim 12, further including:

signals identifying addresses of the appliances and the respective
devices with which the appliances are capable of communicating, the addresses
5 being stored in the central controller, the central controller identifying the devices
capable of communicating with the available appliance as a function of the
addresses.

15. The signals executable on a computing device as set forth in
claim 12, further including:

signals for balancing respective loads assigned by the central
controller to the appliances.

16. The signals executable on a computing device as set forth in
claim 12, further including:

detection signals transmitted between the appliances and the
devices, optimal paths from the respective appliances to the devices being
5 determined as a function of the detection signals.

17. The signals executable on a computing device as set forth in
claim 12, further including:

ping signals transmitted from each of the appliances to each of the devices for determining the devices capable of communicating with the respective appliances.

18. The signals executable on a computing device as set forth in claim 17, wherein the identification signals are determined as a function of the ping signals.

19. The signals executable on a computing device as set forth in claim 12, wherein the means for ensuring the appliances are active determines a time since the central controller last received the notification signals from the respective appliances.